

Sub A1

WHAT IS CLAIMED IS:

1. An image pickup apparatus comprising:
a pixel area including a plurality of pixels; and
a substrate on which said pixel area is
integrated,
wherein a center of said pixel area and that of
said substrate substantially coincide with each other.
2. An apparatus according to claim 1, wherein
said substrate includes a processing circuits arranged
to perform a predetermined processing, which are
integrated on said substrate on at least two sides
facing each other across said pixel area.
3. An apparatus according to claim 1, wherein
said substrate includes a processing circuit arranged
to perform a predetermined processing, which is
integrated on said substrate on at least one of two
sides facing each other across said pixel area, and a
dummy circuit or pad which is arranged on the other
side.
4. An apparatus according to claim 1, wherein
said substrate includes an area planarized by chemical
mechanical polishing.
5. An apparatus according to claim 1, wherein

said pixel area is formed by arranging a plurality of pixel groups each having a two-dimensional array of pixels, and

5 said apparatus further comprises lenses arranged correspondingly to the respective pixel groups to form light into images on the pixel groups.

10 6. An apparatus according to claim 5, further comprising color filters arranged for the respective pixel groups,

wherein said color filters are not integrated on said substrate.

15 7. An image pickup system comprising:
an image pickup apparatus defined in claim 1;
a signal processing circuit arranged to process a signal from said image pickup apparatus; and
a memory arranged to store the signal from said signal processing circuit.

20 8. An image pickup apparatus comprising:
a substrate on which a pixel area including a plurality of pixels is arranged;

25 a lens arranged to form light into an image on said pixel area, said lens being not integrated with said pixel area; and

a processing circuits arranged on at least two

sides facing each other across the pixel area to perform predetermined processing,
wherein said substrate and said lens are united.

5 9. An apparatus according to claim 8, wherein
said lens is fixed on at least two sides facing each
other at a periphery of said pixel area.

10 10. An apparatus according to claim 8, wherein a
glass is arranged above said pixel area, and said lens
is fixed to said glass.

15 11. An apparatus according to claim 8, wherein
said pixel area is formed on a semiconductor substrate
different from said substrate, and said semiconductor
substrate is mounted on said substrate.

20 12. An apparatus according to claim 8, wherein
said pixel area is integrated on said substrate.

25 13. An apparatus according to claim 8, said
processing circuits include scan circuits arranged to
sequentially scan the pixels' said scan circuits being
arranged on at least two sides facing each other across
said pixel area.

14. An apparatus according to claim 8, wherein

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5 said processing circuits include one of an A/D conversion circuit, a clock circuit arranged to supply a clock signal, a power supply circuit, and an analog circuit including at least one of an auto gain controller and a corrected double sampling circuit,
10 arranged on at least one of two sides facing each other across said pixel area, and one of the A/D conversion circuit, the clock circuit, and the analog circuit, arranged on not said one but the other of the two
15 sides.

15. An image pickup system comprising:
an image pickup apparatus defined in claim 8;
a signal processing circuit arranged to process a
15 signal from said image pickup apparatus; and
a memory arranged to store the signal from said
signal processing circuit.

20 16. An image pickup apparatus comprising:
a substrate on which a pixel area including a plurality of pixels is arranged;
a lens arranged to form light into an image on
said pixel area, said lens being not integrated with
25 said pixel area;
a processing circuit arranged on at least one of
two sides facing each other across the pixel area to
perform a predetermined processing; and

a dummy circuit or pad arranged on the other of
the two sides,

wherein said substrate and said lens are united.

5 17. An apparatus according to claim 16, wherein
said lens is fixed on at least two sides facing each
other at a periphery of said pixel area.

10 18. An apparatus according to claim 16, wherein a
glass is arranged above said pixel area, and said lens
is fixed to said glass.

15 19. An apparatus according to claim 16, wherein
said pixel area is formed on a semiconductor substrate
different from said substrate, and the semiconductor
substrate is mounted on said substrate.

20 20. An apparatus according to claim 16, wherein
said pixel area is integrated on said substrate.

25 21. An apparatus according to claim 16, wherein
said processing circuit includes a scan circuit
arranged to sequentially scan the pixels.

25 22. An apparatus according to claim 16, wherein
said processing circuit includes one of an A/D
conversion circuit, a clock circuit for supplying a

clock signal, a power supply circuit, and an analog circuit including at least one of an auto gain controller and a corrected double sampling circuit.

5 23. An image pickup system comprising:
an image pickup apparatus defined in claim 16;
a signal processing circuit arranged to process a
signal from said image pickup apparatus; and
a memory arranged to store the signal from said
signal processing circuit.
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